

AMENDMENT TO THE TITLE OF THE INVENTION

Please replace the original title of the invention with the following rewritten title.

*“ILLUMINATING LIGHT SOURCE HAVING REDUCED SPECKLE NOISES AND
TWO-DIMENSIONAL IMAGE DISPLAY USING THE SAME”*

AMENDMENTS TO THE SPECIFICATION AND ABSTRACT

In the specification, pages 1 and 2, paragraph [0002], please amend as follows:

FIG. 7 is a view schematically showing the configuration of a laser display in the related art described in detail, for example, in Non-Patent Document 1. Light beams from laser light sources 101a, 101b and 101c for three colors, RGB, are combined by dichroic mirrors 102a and 102b and mirror 107, sent through a light collection lens 109, and scanned in the horizontal direction by a polygon scanner 104 and in the vertical direction by a galvanometer scanner 105 to be irradiated onto a screen 108. In this instance, a video is displayed on the screen by modulating intensity by light modulators 106a through 106c according to an input video signal. For example, in order to display a moving image corresponding to an NTSC video signal, about 500 scan lines in the horizontal direction are displayed for 30 frames per second, and the number of horizontal scan lines in total is 15,000 per second. This can be achieved by rotating a polygon scanner having 30 faces at 30,000 rpm. The galvanometer mirror is oscillated to reciprocate in the vertical direction 30 times per second. The resolution in the horizontal direction is determined by a modulation rate of the light modulators with respect to the scan rate. For example, in order to obtain the resolution comparable to 500 TV lines in the horizontal direction at the scan rate specified above, a bandwidth of about 10 MHz is necessary on the basis of $500 \times 15,000 = 7,500,000$. Such a bandwidth can be achieved with a light modulator using the acousto-optic effect or a light modulator using the electro-optic effect.

In the specification, page 4, paragraph [0007], please amend as follows:

The above and other objects are achieved by a 2-D image display device according to one aspect of the invention, which includes: a coherent light source; 2-D beam scan means (2-D beam scanner) for scanning light from the coherent light source two-dimensionally; light intensity modulation means (light intensity modulator) for modulating the light from the coherent light source in intensity; and beam oscillation means (1-D beam scanner) for minutely oscillating the light from the coherent light source.

In the specification, pages 7 and 8, paragraph [0014], please amend as follows:

FIG. 1 is a view schematically showing the configuration of a 2-D image display device of the invention. Light beams emitted from a red laser light source 1a, a green laser light source 1b, and a blue laser light source 1c are modulated, respectively, by light modulators 6a, 6b, and 6c that modulate light according to a video signal, and then combined by dichroic mirrors 2a and 2b and mirror 7. Further, a light beam is deflected in the x-direction (horizontal scan) by a polygon scanner 4 and subsequently deflected in the y-direction (vertical scan) by a galvanometer scanner 5 to be projected onto a screen 8 in the form of a 2-D image. In this instance, light beams modulated by the light modulators 6a through 6c are oscillated minutely on the screen 8 by beam oscillation means 3. In this instance, the beam on the screen is collected by a light collection lens 9 to form a minute light spot. The size of the light spot is smaller than oscillation amplitude on the screen 8 by the beam oscillation means 3.

In the Abstract, please amend as follows:

In a laser display ~~that displays~~ displaying a video by scanning a beam from a laser light source two-dimensionally on a screen, ~~the image quality being displayed~~ is deteriorated markedly by speckle noises induced from coherency of the light source. A known method for of oscillating the screen to remove the speckles has ~~problems~~ a problem that a large-scale device is necessary and the screen cannot be chosen without any restraint. A speckle pattern that is generated can be suppressed using a beam oscillating means that oscillates a light spot on the screen at a high speed, causing a viewer to perceive a time-mean image as not having speckle noises.

~~A speckle pattern being generated is changed at a high speed by oscillating a light spot on the screen at a high speed using beam oscillation means 3, so that the viewer acknowledges time-mean image having no speckle noises.~~